

CLAIMS

1. A conductive polymer gel comprising water as a main component, a conductive conjugated polymer, and at least one
5 of a surfactant and an alcohol.
2. The conductive polymer gel according to claim 1, which further contains an electrolyte.
- 10 3. The conductive polymer gel according to claim 1, wherein the conductive conjugated polymer is doped with a dopant.
4. The conductive polymer gel according to claim 1, wherein the conductive conjugated polymer is polypyrrole or
15 polythiophene.
5. The conductive polymer gel according to claim 3, wherein the dopant is polystyrenesulfonic acid.
- 20 6. The conductive polymer gel according to claim 1, which contains alkylbenzenesulfonic acid as the surfactant.
7. The conductive polymer gel according to claim 1, which contains at least one of a monohydric alcohol having 3 or
25 more carbon atoms and a polyhydric alcohol as the alcohol.

8. A method of producing a conductive polymer gel, which comprises the steps of:

adding at least one of a surfactant and an alcohol to
5 at least one of a conductive conjugated polymer colloidal dispersion and a conductive conjugated polymer solution, and
leaving the resulting mixture to stand, thereby to
gelatinize at least one of the conductive conjugated polymer colloidal dispersion and the conductive conjugated polymer
10 solution.

9. An actuator comprising an actuator body made of a conductive polymer gel, wherein the conductive polymer gel contains water, as a main component, a conductive conjugated
15 polymer, and at least one of a surfactant and an alcohol.

10. An iontophoretic patch label comprising a pad made of a conductive polymer gel, and a pair of electrodes provided on one surface of the pad at regular intervals,
20 wherein the conductive polymer gel contains water, as a main component, a conductive conjugated polymer, and at least one of a surfactant and an alcohol.

11. A biomedical electrode comprising an electrode device,
25 and a member which electrically and physically connects the

electrode device to an analyte, wherein the member is made of a conductive polymer gel and the conductive polymer gel contains water, as a main component, a conductive conjugated polymer, and at least one of a surfactant and an alcohol.

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12. A toner comprising a core made of a conductive polymer gel, and a resin portion provided on the surface of the core, wherein the conductive polymer gel contains water, as a main component, a conductive conjugated polymer, and at least one
10 of a surfactant and an alcohol.

13. The toner according to claim 12, wherein the conductive conjugated polymer is doped with a dopant.

15 14. A conductive functional member comprising a base material, and a conductive portion made of a toner provided on at least one surface of the base material,

wherein the toner comprises a core made of a conductive polymer gel, and a resin portion provided on the surface of
20 the core, and

the conductive polymer gel contains water, as a main component, a conductive conjugated polymer, and at least one of a surfactant and an alcohol.

25 15. An antistatic sheet comprising a base material, and a

conductive portion made of a toner provided on at least one surface of the base material,

wherein the conductive portion has a planar shape,

the toner comprises a core made of a conductive polymer gel, and a resin portion provided on the surface of the core, and

the conductive polymer gel contains water, as a main component, conductive conjugated polymer, and at least one of a surfactant and an alcohol.

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16. A printed circuit member comprising a base material, and a conductive portion made of a toner provided on at least one surface of the base material,

wherein the conductive portion has a planar shape,

15 the toner comprises a core made of a conductive polymer gel, and a resin portion provided on the surface of the core, and

the conductive polymer gel contains water, as a main component, conductive conjugated polymer, and at least one of a surfactant and an alcohol.

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17. A conductive paste comprising a conductive polymer gel, a conductive powder and a resin binder,

wherein the conductive polymer gel contains water, as a main component, a conductive conjugated polymer, and at least

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one of a surfactant and an alcohol.

18. The conductive paste according to claim 17, wherein the conductive conjugated polymer is doped with a dopant.

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19. A conductive functional member comprising a base material, and a conductive portion made of a conductive paste provided on at least one surface of the base material,

wherein the conductive paste contains a conductive
10 polymer gel, a conductive powder and a resin binder, and

the conductive polymer gel contains water, as a main component, a conductive conjugated polymer, and at least one of a surfactant and an alcohol.

15 20. A printed circuit member comprising a base material, and a conductive portion made of a conductive paste provided on at least one surface of the base material,

wherein the conductive paste contains a conductive polymer gel, a conductive powder and a resin binder, and

20 the conductive polymer gel contains water, as a main component, a conductive conjugated polymer, and at least one of a surfactant and an alcohol.

21. The printed circuit member according to claim 20, wherein
25 an antenna is made of the linear conductive portion and an IC

chip is connected to the antenna.

22. An electrode for fuel cell comprising a conductive polymer gel, wherein the conductive polymer gel contains
5 water, as a main component, a conductive conjugated polymer, and at least one of a surfactant and an alcohol.

23. The electrode for fuel cell according to claim 22,
wherein the conductive conjugated polymer is doped with a
10 dopant.

24. A fuel cell comprising a power generation portion composed of one or more cells stacked with each other, each cell comprising first and second electrodes, and an
15 electrolyte interposed between the electrodes, wherein at least one of the first and second electrodes contains a conductive polymer gel and the conductive polymer gel contains water, as a main component, a conductive conjugated polymer, and at least one of a surfactant and an alcohol.